



Original research article

# Overcoming energy injustice? Bulgaria's renewable energy transition in times of crisis

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## ABSTRACT

The effects of renewable energy transitions on energy costs and economic growth have led to cost concerns and a prioritisation of economic issues during the economic crisis. Bulgaria, the EU's poorest state has nevertheless already achieved its 2020 renewable energy targets. This achievement seems to challenge the widely held assumption that poorer countries struggle to meet environmental objectives. This paper analyses the drivers and implications of Bulgaria's renewables expansion in order to test general expectations on influential factors shaping renewable energy transitions in the context of poor states. The analysis employs the energy justice framework to identify the justice, equity and fairness implications of Bulgaria's renewable energy for its energy system. Despite the clear justice implications raised by changing energy systems, there are limited pieces analysing the relationship between renewable energy transitions and energy justice. The analysis shows that whilst Bulgaria was able to reach its renewables targets, the mismanaged, opaque and corrupted policy framework undermines the longterm viability of its energy transition. The analysis confirms the importance of long term strategies, effective policies and a supportive macroeconomic context for renewable energy transitions, and highlights the negative implications of renewables to achieve greater energy justice if these factors are omitted.

## 1. Introduction

Renewable energy transitions are considered expensive due to their high initial capital costs and hence require regulatory support, for example through preferential pricing mechanisms [1,2]. However, subsequently increasing electricity prices, paired with a displacement of fossil fuel industries, have potentially negative effects on economic growth [3,4]. As such, in the wake of the European economic and debt crisis, Slominski [5] suggests that economic issues have been prioritised over climate change, as concerns over the cost implications of climate measures heightened. Nevertheless, in 2013 Bulgaria became the first EU member-state to reach and exceed its renewable targets under the Europe 2020 Strategy after having essentially no renewable energy installed prior to its accession in 2007 (with the exception of large-scale hydropower). This article therefore seeks to determine how Bulgaria, as the poorest EU member-state, managed to meet its 2020 renewable targets in times of economic crisis and austerity, and the consequences for its economy and energy system.

Generally, contemporary literature has identified several influential factors shaping renewable energy transitions, such as the need for a strong long-term political support [6], an effective and dynamic policy

design [7–9], as well as a supportive macroeconomic wealth context, such as high levels of income [10]. At the same time, expanding renewables is associated with wider environmental, economic and societal benefits. These include lower energy costs in the medium to long-run [6], as well as an improved availability and sustainability of the energy system in terms of reduced emissions, distributed power generators, and an infinite resource availability [11–14]. However, the majority of literature on renewable energy transitions has focussed on wealthy countries, such as Denmark, Germany, and the UK [15–21]. It is therefore important to address how well these assumptions and potential benefits stand up in a less-wealthy country.

Furthermore, the benefits of renewable energy transitions resonate with several aspects of energy justice. These aim to ensure access to clean and affordable energy, and to overcome the unequal distribution of environmental ills associated with the production and use of energy through an inclusive and transparent process in the development and implementation of energy projects and policies [22]. Based on Jenkins et al. [23] energy justice provides a comprehensive analytical framework for researching energy systems, and can be applied as a “conceptual tool for ethicists, an analytical tool for energy researchers, and a decision-making tool for policy-makers” [24,25, p. 671]. While selected

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works have addressed burdens and benefits of renewable energy transitions [26,27], to the best of our knowledge, there has so far not been an inclusive analysis of them in terms of energy justice. This gap on comprehensively establishing potential synergies between the objectives of energy justice and the impacts of renewable energy transitions is evident in both the renewable energy and energy justice literatures, although renewables do take a prominent role in energy justice debates [28,22–24]. This paper therefore hopes to help close this gap by addressing the societal and economic impacts of Bulgaria's renewable energy transition in terms of energy justice, and thereby provide a potential pathway for future analyses. It further contributes to our contemporary understanding of the drivers and factors shaping renewable energy transitions in a less-wealthy country by analysing the largely under-researched case of Bulgaria.

The paper begins with an outline of our conceptual and methodological approach. The analysis first addresses how Bulgaria achieved its 2020 targets. In this section, we conduct a brief policy analysis of the regulatory framework that drove the transition, and draw from a set of semi-structured interviews to identify the key influential factors that established the favourable policy environment. We then analyse the consequences of Bulgaria's fast expansion of renewables. In the last part of the analysis, we assess the case of Bulgaria's renewable energy transition through the lens of energy justice. To do so we expand on the existing energy justice framework. We then discuss our findings and offer some conclusions.

## 2. Conceptual and methodological approach

Our analysis employs a mixed-method approach, including a set of semi-structured expert interviews, as well as analyses of major policies and reports, and is supported by secondary sources, such as peer-reviewed articles. Between February and April 2017, we conducted eight interviews in Bulgaria via Skype with members of non-governmental organisations, academia, and the media, as well as politicians and civil servants to establish the factors influencing Bulgaria's renewable energy transition and to gain insights into its consequences. Interview contributions are coded according to their affiliation.<sup>1</sup> The paper is guided by these semi-structured interviews and supported by the qualitative analysis.

Adding to the findings of the initial investigation we assess Bulgaria's renewables expansion in light of energy justice. Rooted in environmental justice, this approach questions the justice, equity and fairness of contemporary energy systems. As a framework it follows the three tenets of distributional justice (benefits and burdens of energy systems), procedural justice (fair, transparent, non-discriminatory and inclusive decision-making processes), and justice as recognition (uphold human dignity) [29,25,23]. Energy justice thereby incorporates issues of economics, scarcity and pollution by focusing on decision-making processes of energy, and its production, generation, and consumption, as well as consequent societal implications through a lens of intra- and intergenerational justice [24,25].

Based on the three justice tenet framework, Sovacool and Dworkin [24] establish eight principles of energy justice: availability (access to energy), affordability (cost of energy), due process (stakeholder participation, rule of law), good governance (fair and transparent decision-making processes; effective, efficient and responsive legislation), sustainability (sustainable use of resources), intragenerational equity (equal access to basic energy services), intergenerational equity (right of future generations to live undisturbed of the damage inflicted by today's energy systems), and responsibility (all nations are responsible to minimise energy-related environmental threats). While these

principles allow for a more specialised analysis of energy justice factors, they are highly interrelated and mutually reinforcing. We therefore analyse them in a grouped format with respect to (i) due process and good governance, (ii) availability, sustainability and affordability, (iii) and intra- and intergenerational justice, and responsibility. Furthermore, justice is an inherently contested concept and therefore, rather than considering justice as an absolute, we seek to identify justice trends in Bulgaria's energy system. In the following we outline the groups of analysis and how we measure achieving, or failing to achieve, greater energy justice in each principle.

We firstly analyse the principles of 'due process' and 'good governance', addressing primarily the procedural justice and justice as recognition tenets. We identify 'due process' through (i) the inclusion of relevant stakeholders in the decision-making processes and effective consultations with affected communities, and (ii) the provision of environmental and social impact assessments. 'Good governance' is identified according to a low level of corruption, transparent government actions, and the provision of effective, efficient and responsive legislation. We therefore assess (i) if the Bulgarian government made information on policies and agreements publicly available, and (ii) if implemented policies achieved their intentions, and were responsive to unforeseen contextual changes.

Secondly, we focus on the distributive justice tenet by determining the availability, affordability and sustainability principles. As 'availability' is improved if a country can guarantee the undisrupted provision of high-quality energy services to its population, we determine improvements in terms of overall energy dependence levels,<sup>2</sup> stability of the grid (represented through distribution losses), and quality of energy supply. 'Affordability' is concerned with energy costs borne by consumers and improved – and thereby measured – according to price stability (minimal volatility) and actual costs that are not to exceed 10% of income, which is the commonly used threshold of energy poverty [25]. We measure improved 'sustainability' from a climate and energy perspective. We therefore assess whether emission levels have been reduced and renewable energy sources increased. Renewables are the most sustainable energy sources since they do not require the exploitation of finite resource stocks.

Finally, we address intra and inter-generational equity and responsibility. As each principle is dependent on the achievements in already analysed justice principles, this group acts somewhat as an overall summary of energy justice in terms of contemporary justice, future justice, and the role of government. 'Intragenerational equity' represents a combination of above factors of access to energy to all (availability) without discrimination (due process/good governance), at a price that neither overburdens poorer sections of society (affordability), nor results in the pollution of environmental goods, such as air (sustainability). 'Intergenerational equity', in turn, is concerned with the effects of contemporary actions for future generations, and thereby depends on the current meeting of energy justice principles that affect the future, particularly the sustainability principle. Also relating particularly to current sustainability actions is the principle of 'responsibility' that considers nations to be responsible to protect the natural environment, limit social and environmental costs associated with the production and use of energy. It therefore considers the ability and willingness of the government to improve the sustainability of its energy system.

## 3. Background: enabling Bulgaria's renewable energy transitions in times of crisis

The global financial and economic crisis paired with the European Debt Crisis had extensive implications for the Bulgarian economy that

<sup>1</sup> Academia (ACAD), Bulgarian Energy and Mining Forum (BEMF), Center for the Study of Democracy (CSD), Government (GOV), Green Party (GREEN), Media Outlet (NEW), and the WWF (WWF).

<sup>2</sup> In terms of energy security, and as stressed by the European Commission's [84] European Energy Security Strategy, dependence of imports for energy is considered a risk.

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